APCT CENTER
ANNOUNCEMENT FOR HEAVY-DUTY DIESEL ENGINE TESTING ORGANIZATIONS

INTRODUCTION/SUMMARY

The Air Pollution Control Technology (APCT) Center is seeking qualified independent testing organizations capable of performing verification tests on emissions controls for heavy-duty diesel engines. The technologies may include retrofit devices such as diesel oxidation catalysts and diesel particulate filters; selective catalytic reduction systems; fuel modifications such as additives and reformulations; biodiesel fuels; and lubricants. The testing organization is expected to be capable of testing multiple types of technologies submitted to the Center. The testing organization must meet the requirements set forth in program Quality Management Plans (QMPs), test protocols, and test/quality assurance (QA) plans. Testing load varies over time, and the Center cannot guarantee that qualified testing organizations will receive any specific amount of work.

BACKGROUND

Throughout its history, the US Environmental Protection Agency (EPA) has evaluated technologies to determine their effectiveness in monitoring, preventing, controlling, and cleaning up pollution. Since the early 1990s, however, numerous government and private groups have determined that the lack of an organized and ongoing program to produce independent, credible performance data is a major impediment to the development and use of innovative environmental technology. Such data are needed by technology buyers and permitters, both in the United States and abroad, to make informed technology decisions. To overcome this impediment, EPA established a program to accelerate the implementation of environmental technology through objective verification and reporting of technology performance. In October 1995, the Environmental Technology Verification (ETV) Program was established by EPA. The ETV Program develops testing protocols and verifies the performance of innovative technologies that have the potential to improve protection of human health and the environment. The goal of ETV is to provide credible performance data for commercial-ready environmental technologies to speed their implementation for the benefit of vendors, purchasers, permitters, and the public.[1]

The ETV Program operates as a public-private partnership through agreements between EPA and private testing and evaluation organizations. The APCT Center, a verification center in the ETV Program, operates as a partnership between EPA and RTI International[2]. The Center involves industry, government, and public stakeholders at all levels of the verification process. The APCT Center verifies the performance of commercial-ready technologies designed to control stationary and mobile air pollution sources and to mitigate the effects of indoor air pollutants. Among the control technologies the Center addresses are diesel engine retrofit emission controls.

All testing employs approved protocols or plans that incorporate stakeholder interests, and verified performance is reported in verification reports with statements signed by EPA. RTI contracts with qualified testing organizations to perform verification tests.

[1] EPA Environmental Technology Program Fact Sheet, June 2004

[2] *RTI International* is a trade name of Research Triangle Institute

APCT CENTER
ANNOUNCEMENT FOR HEAVY-DUTY DIESEL ENGINE TESTING ORGANIZATIONS

QUALIFYING ADDITIONAL TESTING ORGANIZATIONS

The 4-step process to become a qualified testing organization is outlined below.

Steps for Qualifying Testing Organizations for the APCT Center

1. Pre-application (no fee)	Expression of interest documenting qualifications, capabilities, and experience testing engines, including heavy-duty diesel engines.
2. Application ($2K fee)	Submit QMP. (QMP must be approved by the APCT Center and EPA before proceeding to Step 3.) Submit recent test report.
3. Quality System Audit ($25K fee)	Develop test/QA plan jointly with the APCT Center. (Test/QA plan must be approved by the APCT Center and EPA before proceeding to Step 4.) Host on-site Quality System Audit from EPA and/or APCT Center. Satisfactorily respond to findings of quality system audit.
4. Technical System Audit (during first assigned test)	Host on-site Technical System Audit from EPA and/or APCT Center. Satisfactorily respond to findings of technical system audit.

All testing organizations subcontracted by the APCT Center for verification testing must have an ISO 9001:2000-certified or ANSI E4-compliant (ANSI 1994) quality system in place. Documentation and records management must be performed according to the ETV Program QMP (December 2002) or its superceding document, the APCT Center QMP, and the applicable protocols for the technology area.

- ETV QMP (December 2002) (http://www.epa.gov/etv/pdfs/qmp/00_qmp_etv.html)
- APCT Center QMP (May 2005) (http://etv.rti.org/apct/pdf/apctqmp.pdf)
- APCT Center applicable GVPs for technology area (See http://etv.rti.org/apct/documents.cfm for specific GVPs)

Testing organizations that have the required qualifications and experience will be invited to submit a QMP and a sample report from a recent test. An application fee of $2000 is required to cover APCT Center costs for review.

Upon approval of the testing organization's QMP, the organization will be invited to develop jointly with the APCT Center a test/QA plan that meets EPA *Requirements for Quality Assurance Project Plans* and describes in detail how the organization plans to implement the test methods specified in the protocol. The testing organization will also be subject to a Quality System Audit by representatives of the APCT Center and/or US EPA and must respond to the findings in a satisfactory manner. Testing organizations will bear the expense of developing the test/QA plan, and hosting and responding to the QSA. For testing organizations within the contiguous United States that provide English-language documentation of an established E4-compliant quality system, this fixed fee is $25,000. Testing organizations outside this scope will incur additional fees.

APCT CENTER
ANNOUNCEMENT FOR HEAVY-DUTY DIESEL ENGINE TESTING ORGANIZATIONS

Upon EPA approval of the test/QA plan, the testing organization will be qualified on a probationary basis pending a technical system audit by representatives of the APCT Center and/or US EPA of an actual verification test. The testing organization will be fully qualified after successfully responding to the findings of the technical system audit.

SUMMARY OF VERIFICATION PROCESS

The testing organization is an integral part of the verification team that also includes the applicant, the APCT Center, and representatives of regulatory agencies such as the EPA Office of Transportation and Air Quality (OTAQ) or California Air Resources Board (CARB). Periodically the testing organization may be asked to participate in stakeholder meetings to review and provide comments on test protocols as well as provide technical input on test methods, engine and emission control technologies.

The verification process is summarized below:

- The manufacturer initiates the verification process by submitting an application to the APCT Center and OTAQ.
- The applicant, the APCT Center, the testing organization, and OTAQ discuss the intent of the test and develop a testing outline.
- After the initial discussions have been completed, the APCT Center prepares a contract outlining Terms & Conditions, Statement of Work (SOW), and Cost.
- The applicant approves and returns a signed copy of the Terms & Conditions with full payment to the APCT Center.
- The APCT Center and its testing organization (with input from the applicant) prepare a technology-specific test plan addendum, to be approved by EPA, by following the applicable protocol.
- The applicant provides the technology and the engine intended for verification testing to the APCT Center-designated testing organization.
- Testing is conducted by the testing organization.
- A test report is prepared by the testing organization and submitted to the APCT Center.
- The APCT Center submits a draft verification report and verification statement to EPA. The applicant also receives a copy to review.
- EPA approves and signs the verification report and statement.
- The APCT Center releases the verification statements and reports.

RESPONSIBILITIES OF THE TESTING ORGANIZATIONS

The following table outlines the roles and responsibilities of the testing organization after it has been fully qualified to perform verification testing by the APCT Center.

APCT CENTER
ANNOUNCEMENT FOR HEAVY-DUTY DIESEL ENGINE TESTING ORGANIZATIONS

Testing Organization's Responsibilities

Before verification testing	Participate in development of SOW for individual applicants. Provide APCT Center with quote for verification testing based on SOW.
During verification testing	Receive test parts and engines. Conduct verification testing. Host on-site Technical System Audit from EPA and/or APCT Center. Satisfactorily respond to findings of technical assessment.
After verification testing	Submit test report to APCT Center. Review draft verification report and statement.

When the SOW is finalized, the testing organization provides a quote for testing to the APCT Center. The APCT Center provides the applicant with a quote for the verification testing that includes testing and the verification report. Upon receipt of the signed contract and payment from the applicant, the APCT Center will contract the testing organization to conduct the test.

The testing organization will receive the technology from the applicant. The testing organization is not responsible for providing the engine for verification testing, but may offer suitable engines, if available. Prior to ETV testing, the applicant may contract with the testing organization to conduct additional testing outside of the ETV process. Data generated outside a verification contract between the applicant and APCT vendor cannot be used as the basis of a verification report.

The testing organization must provide sufficient advance notice to allow the applicant, representatives of the APCT Center, and/or US EPA to witness verification testing. The APCT Center reserves the right to conduct TSAs on qualified testing organizations.

The testing organization will notify the APCT Center of any tests deemed invalid for technical or QA reasons within 24 hours' of invalidation. The testing organization will also notify the APCT Center of any issues, such as engine malfunctions, which may compromise the integrity of the testing or delay the test schedule within 24 hours' of development. Within 30 days of completing the verification test sequence, the testing organization will submit a test report documenting the results to the APCT Center. The testing organization will complete a performance evaluation audit and a quantitative self-assessment on each test, and audits of data quality of at least 10 percent of all the ETV data, with detailed reports of the audit results to be included in the data packages submitted to the APCT Center for review. Additionally, the report must indicate compliance with all applicable regulatory test procedures and detail all deviations to the test plan

The testing organization will review the draft verification report and statement written by the APCT Center and respond with comments in a timely manner.

Upon completion of the verification, the testing organization will submit an invoice to the APCT Center for payment.

APCT CENTER
ANNOUNCEMENT FOR HEAVY-DUTY DIESEL ENGINE TESTING ORGANIZATIONS

RESPONDING TO THIS ANNOUNCEMENT

Testing organizations are requested to submit a pre-application package that documents their qualifications, facilities, capabilities, limitations, and experience on or before **September 16, 2005**, to:

Ms. Jenni M. Elion
CAT/Building 11, Bay 4
RTI International
PO Box 12194 (street address 3040 Cornwallis Road)
Research Triangle Park, NC 27709

Testing organizations are required to include street and/or mailing address, telephone and fax numbers, and complete point of contact information for the technical, quality, and contractual matters.

Testing organizations are required to certify that they have had an ISO 9001:2000-certified quality system in place for 12 months' prior to the date of their submission and possess the quality manual, procedural documents (e.g., applicable policy and procedure manuals), and detailed quality documents (e.g., Standard Operating Procedures). Testing organizations should include the scope of the organization's ISO 9001:2000 certification, as far as both the activities and geographical locations covered by the certifications are concerned, and specify which accredited certification body issued the certificate.

Testing organizations that are not ISO 9001:2000 certified must certify that their quality system conforms to the requirements of ANSI/ASQ Standard E4-1994.

Testing organizations are required to certify that they conduct emissions tests on heavy duty diesel engines in compliance with all the requirements of the Federal Test Procedure documents in 40 CFR Part 86 (for on-highway engines and vehicles) and 40 CFR Part 89 (for nonroad compression ignition engines). Testing organizations are to summarize all heavy-duty diesel engine emissions testing conducted in the 12 months' prior to the date of submission. For all testing characterized as following EPA or FTP procedures in the past 12 months, all records required by 40 CFR Part 86 or Part 89 should be retained and may be reviewed as part of the qualification process.

Testing organizations are required to detail the capabilities of test equipment that will support verification testing per the applicable protocols, including but not limited to:

- engine dynamometer(s),
- chassis dynamometer(s),
- emissions measurement equipment,
- calibration equipment.

APCT CENTER
ANNOUNCEMENT FOR HEAVY-DUTY DIESEL ENGINE TESTING ORGANIZATIONS

Testing organizations are required to detail the qualifications, test experience and training of key personnel. Because verification testing may be conducted on a broad range of engines and emission control technologies, the pre-application should describe capabilities to accurately (in compliance with all applicable regulations) measure emissions from on-highway heavy-duty diesel engines ranging from 1990 through 2007 model years. The pre-application should include a description of correlation testing performed with other independent laboratories, government organizations or manufacturers engaged in the engine certification process. Additionally, in-house correlation and ongoing testing documenting test cell variability over time should be fully described.

To facilitate the verification process, it is also helpful (but not required) if laboratories have engines available for verification testing. Consequently, the pre-application should include a description of engines that could be used in the verification process as well as the emission levels and variability for the test engines.

Testing organizations should not submit quality management plans or test reports with their initial response, but will be asked to provide QMPs and other documentation later with a full application.

Testing organizations that meet the quality system requirements will be invited to submit QMPs based on how their demonstrated capabilities and experience match with the governing protocols and program needs.